

# African Americans' Decisions Not to Evacuate New Orleans Before Hurricane Katrina: A Qualitative Study

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Public health's success critically depends on the public's willingness to cooperate and comply with evacuation and other mandates during emergencies. When individuals or groups fail to cooperate, they could face disproportionate mortality and morbidity.<sup>1</sup> Hurricane-related flooding causes risks of water-borne infectious illnesses<sup>2</sup> because of contamination with sewage, agricultural and industrial waste, and septic tank waste. Natural disasters often disrupt electricity and water supply systems, aggravating public hygiene and disinfection measures and facilitating infectious disease outbreaks. Within a month of Hurricane Katrina, the Centers for Disease Control and Prevention reported 22 cases (18 wound-related) and 5 deaths from *Vibrio* illness. In addition, upper respiratory infections, pneumonia, and gastrointestinal illnesses were widely reported.<sup>3</sup> Heavy rains and flooding caused an increase in the mosquito population, leading to fears of West Nile virus and dengue epidemics. Despite these hazards, the mandatory evacuation requests of the government in the wake of Hurricane Katrina failed to result in complete evacuation of New Orleans, La, residents. Disproportionately large numbers of those seeking refuge at the designated shelters in New Orleans were African American, and three fourths of the 2300 reported missing and the majority of the 668 reported dead from Louisiana were African American.<sup>4</sup>

Several authors have examined the factors that impact evacuation patterns in the United States.<sup>5–9</sup> Dow and Cutter<sup>5,6</sup> conducted a telephone survey of South Carolina residents who were given mandatory evacuation directions by the governor in 1999 when Hurricane Floyd was poised for landfall. The factors that influenced evacuation response were magnitude of the storm, proximity of the storm to respondent, elected official decrees, and past

**Objectives.** We examined the psychosocial and personal factors that influenced African Americans' decision not to evacuate New Orleans, La, before Hurricane Katrina's landfall.

**Methods.** We conducted 6 focus groups with 53 African Americans from New Orleans who were evacuated to Columbia, SC, within 2 months of Hurricane Katrina.

**Results.** The major themes identified related to participants' decision to not evacuate were as follows: (1) perceived susceptibility, including optimism about the outcome because of riding out past hurricanes at home and religious faith; (2) perceived severity of the hurricane because of inconsistent evacuation orders; (3) barriers because of financial constraints and neighborhood crime; and (4) perceived racism and inequities.

**Conclusions.** Federal, state, and local government disaster preparedness plans should specify criteria for timely evacuation orders, needed resources, and their allocation (including a decentralized distribution system for cash or vouchers for gas and incidentals during evacuation) and culturally sensitive logistic planning for the evacuation of minority, low-income, and underserved communities. Perceptions of racism and inequities warrant further investigation. (*Am J Public Health*. 2007;97:S124–S129. doi:10.2105/AJPH.2006.100867)

hurricane encounters. Other authors have shown that a response to emergency warnings is impacted by the family's preparation for emergencies, having children, consistency and clarity of the warning message, and (female) gender of the respondent.<sup>9</sup> Predictors for non-compliance with evacuation requests are surviving past hurricane encounters, work responsibilities, optimism concerning outcome,<sup>6</sup> being a racial/ethnic minority, crime and fear of property loss, and lack of credible information on a storm or disaster.<sup>9</sup> The purpose of our study was to determine what factors influenced some African Americans' decisions not to evacuate before Hurricane Katrina.

## PARTICIPANTS

To our knowledge, no study has examined the interaction of personal and social factors in African Americans' evacuation response in a disaster. This article presents the findings of a qualitative study that sought to understand

the psychosocial and personal factors that influenced the disproportionately low evacuation response of African Americans in New Orleans in the wake of Hurricane Katrina. The target population was African Americans from New Orleans who did not evacuate before Hurricane Katrina. We conducted 6 focus groups within 2 months of Hurricane Katrina with 53 African Americans recruited by convenience sampling from among those evacuated to hotels in Columbia, SC, by the American Red Cross. Four focus groups had 8 participants each, and the remaining had 10 and 11 participants, respectively.

## DISCUSSION GUIDE

The Health Belief Model (HBM)<sup>10</sup> served as the framework to develop the focus group discussion guide. The core assumptions are that individuals will take a health-related action if they feel that a negative health condition can be avoided, have positive expectations of

avoiding a negative health condition by taking the recommended action, and believe that they can successfully execute the recommended health action. The HBM represents health-related action taking as a process involving 6 determinants. These are perceived susceptibility, perceived severity (seriousness and consequences), perceived benefits (belief in the efficacy of the recommended preventive or safe behaviors to prevent the harmful condition), perceived barriers (perceived tangible and psychological costs to self from engaging in the recommended action), cues to action (strategies to ready the person for the behavior), and self-efficacy (belief in one's ability to take the action). Grunfest<sup>11</sup> suggested that the HBM is particularly appropriate in understanding responses to warnings about personal safety, because health-promoting behavior (evacuating from a potentially hazardous area) is based on perception of risk, barriers (community and personal), and self-efficacy. We developed our discussion guide to address both risk-related action taking and management (response to warning) by African Americans.

## METHODS

The American Red Cross Disaster Relief Operations Control for Columbia, SC, helped with participant recruitment by providing a list of those evacuated from New Orleans to Columbia. All of the evacuees to Columbia were lodged in hotels. Focus groups were conducted between October 3 and October 14, 2005. At the time of the focus groups, almost all of the evacuees were still resident in the hotels and not yet relocated to residential accommodation. In convenience sampling, the selection of participants from the population is based on easy availability and accessibility.<sup>12</sup> Toward that end, the participants' location facilitated recruitment.

Participants were recruited from their respective hotels after a short presentation at a weekly town hall meeting was conducted by relief team coordinators appointed by American Red Cross. Written consent was obtained before each focus group. African American women acted as facilitators and conducted the focus groups. Racially concordant relationships are associated with positive outcomes.<sup>13,14</sup> Facilitators were trained in qualitative research

(masters and doctoral level) with experience in conducting focus groups. Standard focus group protocol was observed,<sup>15</sup> reiterating each participant's responsibility for confidentiality. Individual verbal consent for audiotaping was obtained, and each participant completed a demographic questionnaire on education, marital status, whether they evacuated before or after the hurricane, age, home ownership, number of children in household, and income level. The study goal and appropriate group behaviors were spelled out, participants introduced themselves, and the discussion guide questions were asked. A store gift certificate for US\$50 was awarded to each participant after the session, each lasting approximately an hour and a half.

## Data Analysis

Focus group interviews were audiotaped and transcribed verbatim, with any residual identifying information deleted during data cleaning. A list of themes was developed before data collection, based on the literature review, and served as a guide to develop a draft codebook to classify participant responses. Although the draft codebook served as a starting point, the data were analyzed using a grounded theory approach,<sup>16</sup> accommodating new nodes and relationships as they emerged. During codebook development, the full research team reviewed the code structure twice for logic and breadth. Using the final codebook structure, 2 team members separately coded all of the transcripts using computer software QSR Nvivo 2.0 (QSR International Pty Ltd, Doncaster, Victoria, Australia), where thematic codes were assigned to text sections. Interrater reliability was 0.80 s(r). The coders then jointly resolved disputed codes through discussion.

Focus group methodology is an iterative, qualitative data collection method.<sup>15</sup> The focus group approach seeks to expand our knowledge of the various dimensions of a problem or behavior, using iterations of exploratory discussions with successive focus groups. Depending on the completeness of information on a dimension achieved in a previous focus group, each dimension need not be explored in depth in every group, allowing the limited time (typically no more than an hour and a half) to be used to examine less-explored

dimensions. We present our findings based on the most commonly recurring themes without quantitative attributions of the relative importance of each factor in the final outcome, that is, not evacuating despite mandatory evacuation announcements. Although repetitiveness of themes marks the factor as being important, it is not appropriate to attribute quantitative import or to attach "cause" to the number of recurrences obtained in qualitative research.

## RESULTS

All of the focus group participants were African American (n=53). The majority (92.5%) did not evacuate before Hurricane Katrina, were men (67%), were single (73%), were without children in the household (69%), and were a mean age of 49.9 years. Mean annual and household incomes were US\$15 487 and US\$18 851, respectively; 68% had completed high school or less; most were renters (66%); and average stay at the last residence was 15 years (Table 1).

The focus group quotations are categorized according to HBM. Our discussion guide examined 4 of the 6 determinants of the HBM: perceived susceptibility, perceived severity, perceived barriers, and cues to action. We follow this with an emergent theme related to perceived racism.

### Perceived Susceptibility to Hurricane Katrina

Themes related to perceived susceptibility could be identified under 2 constructs: confidence based on experience with previous hurricane and optimism about the outcome, and religious faith that attenuated their perception of their susceptibility to the hurricane's adverse impact.

*Optimism About Outcome.* Typical quotations on these themes were as follows: "Course it's always been that way with us. I have stayed through many storms, even through Hurricane Betsy. But the storm would come through, we have our flood and get back on track." Additionally, "If I survived Hurricane Betsy, I can survive that one, too. We all ride the hurricanes, you know." Participants also mentioned hurricane

**TABLE 1—Focus Group Participants Demographics: Evacuees from New Orleans after Hurricane Katrina, October 2005**

Variable	Frequency (no.)	% of Participants
Gender		
Men	36	69.92
Women	17	32.08
Total	53	100
Race, African American	53	100
Age, y		
20–29	1	1.88
30–39	9	16.98
40–49	15	28.3
50–59	19	35.84
60–69	8	15.09
≥ 70	1	1.88
Total	53	100
Marital Status		
Married	14	26.42
Single	39	73.58
Total	53	100
Educational Level		
Eighth grade or less	3	5.88
Some high school	19	37.25
Completed high school	13	25.49
Trade school	7	13.73
Some college (> 2 years)	9	17.65
Total	51	100
Annual Income, US \$		
0–9999	22	46.8
10 000–19 999	11	23.4
20 000–29 999	7	14.89
30 000–39 999	2	4.25
40 000–49 999	2	4.25
≥ 50 000	3	6.38
Total	47	100
Household Income, US \$		
0–9999	20	44.44
10 000–19 999	9	20
20 000–29 999	7	15.55
30 000–39 999	3	6.66
40 000–49 999	0	0
≥ 50 000	6	13.33
Total	45	100

*Continued***TABLE 1—Continued**

Household Members		
1	19	37.25
2	11	21.57
3	10	19.61
4	5	9.8
5	2	3.92
6	1	1.96
7	3	5.88
Total	51	100
Children in House		
1	37	69.81
2	4	7.55
3	7	13.21
4	3	5.66
5	2	3.77
Total	53	100
Home Ownership		
Rent	17	32.69
Own	35	67.31
Total	52	100
Years at Residence		
1–9	26	54.16
10–19	9	18.75
20–29	2	4.16
30–39	3	6.25
≥ 40	8	16.66
Total	48	100

riders, those who enjoyed experiencing a natural disaster.

**Religious Faith and Coping.** Religious coping was a repetitive theme with participants' secure faith in god perceived as a powerful protective factor against all odds of disasters. Typical quotations were as follows: "Because I mean I made it through Vietnam and I figured my Lord ain't gonna let me die in nothing like this here. You dig?" Additionally, "Even if we wanted to leave, we would not have made it that far. We might as well stick it through the storm and pray. Thank God for prayer because he answered our prayer."

#### Perceived Severity of Hurricane Katrina

Lack of credibility impacting their perception of the hurricane's severity was a repeated theme. Participants reported confusion about what to do because of inappropriate timing of

mandatory evacuation orders and confusing recommendations from different authorities. Many mentioned the inconsistent evacuation recommendations from the mayor and governor. These factors appeared to have attenuated residents' perception of the severity of the problem and impacted evacuation decisions.

"The mayor did not say it was a mandatory evacuation at first. One or two days before the hurricane hit, he said it was mandatory. It was too late then."

"They didn't give us no warning. . . . When they said leave, it was already too late."

"After [the] levees broke the mayor said mandatory evacuation, before then he was not saying mandatory evacuation."

"Governor said on TV, you didn't want to go, you didn't have to go, cause it was no threat to us, she said."

#### Perceived Barriers to Action

**Financial Barriers to Action.** One barrier to evacuation was financial: being of low socioeconomic status and having little cash on hand. This barrier reflected in 2 subareas: personal transportation and cash for travel and incidentals. Many possessed personal transportation, but the availability of cash for gas to evacuate at the end of the month before payday was a constraint (the hurricane struck on August 29). Cash on hand for incidentals was also noted as a reason for not evacuating: "The hurricane came at the wrong time. We were waiting for our payday," "No money for gas," and "Money was hard to come by at the time."

**Community Networks as Sources of Barriers.** The community network factors that emerged as barriers were neighborhood crime and violence (causing a perception of the need to stay behind to protect valuables), perceived racism in evacuation transportation (inequities in ordering and facilitating public transport evacuation in the different neighborhoods), and opinions of extended family members. The following are a sample of comments: "I could not leave my house. I had too much valuable stuff." "You could not trust the police to protect your stuff. They were stealing too." "They didn't get buses into the neighborhoods. Buses stayed on the line. But in the other neighborhoods buses went into . . . to

pick up. The white neighborhoods.” “At the last minute the mayor said evacuate, but he didn’t bring no buses or nothing.”

**Law Enforcement.** Participants cited active barriers to evacuation by law enforcement, who were restricting residents of African American neighborhoods from crossing neighboring parishes en route to designated shelters. This recurring theme was attributed by participants to racism.

“That was really racial. The parish president made a racist remark. He made a racist remark pertaining to the people of New Orleans. He said to keep those people on the other side.”

“This was about black people crossing over the bridge to that parish, period. It’s mostly affluent. If you crossed the bridge, the police had orders to use force.”

### Cues to Action

**Media Source Credibility.** Credibility of the media sources that disseminated the hazard warning was explored. Participants expressed trust in media reporting of the size and strength of the hurricane, and almost all information on the hurricane was received from television reporting. We did not find any evidence that churches were relied on as an authoritative source for hazard severity information. The following comments are related to credibility of the media: “TV was most credible source. One of the reasons why I trusted it, we trust it, cause you can see it.” “It was right there in front of your eyes showing where it is coming and how fast it’s coming”

**Cues From Extended Family Members.** Extended family influences were important to some participants. In particular, some participants mentioned family members who were elderly and disabled who had trouble evacuating, and they remained with them. One participant made the following comment: “They waited so late to tell us to evacuate. Older people couldn’t get out. My mother is disabled and did not want to leave, so I stayed with her and my brother.”

### Emergent Themes

Although the HBM served as the framework for the focus group discussion guide, several new themes emerged from the focus group discussions, distinct from the HBM

constructs.<sup>16</sup> The emergent themes suggest that the HBM needs further modification in order to more completely explain minorities’ health action-taking at an empirical level.<sup>16</sup>

### Perceived Race-Based Inequities

Race relations was a recurring theme in all of the focus groups. Participants shared their perceptions of the role of race relations in the events before and during Hurricane Katrina. We view this issue as an emergent theme, largely related to a construct of historical inequities.

Dissatisfaction with the government because of its perceived apathy toward low-income African Americans was expressed in all of the focus groups. Perceived inequities were reflected in narratives of New Orleans’s successive administrations’ historic apathy toward and tolerance of flooding of poor (mostly African American) neighborhoods. Participants expressed that, historically, state and local governments have tolerated obsolete drainage systems and levees bordering the lower Ninth Ward, where most of the participants resided. These comments led to related comments on the government’s lack of concern for the poor, particularly minorities located closest to the levees. Comments were similar to these:

“Every time they have a storm like Hurricane Betsy, it always goes in the Lower Ninth Ward. . . . There’s nothing but Blacks and Vietnamese there. We can’t get our streets fixed in the Ninth Ward.”

“Our streets have always overflowed with water and stuff from the sewer after big storms.”

“There was a hurricane before this one. They showed an image of how the city would look if a strong one would come. . . . If they would have took the plans and started building this, you know some people might have had a break on this. I believe the mayor and the governor just didn’t put in a plan.”

“They have been trying to find a way to get rid of us. They had to do it in the way that wouldn’t—wouldn’t be known that they were trying to do it. . . . That storm came through. Gave them the—that idea that [here] come your opportunity, ‘Oh, the storm coming in. The levees breaking.’ And whatever else. . . . Give them \$2000 so they could forget we was trying to kill them.”

## DISCUSSION

Our findings of the salience of surviving past hurricanes, delays in issuing mandatory evacuation orders by the state and local government, not having cash on hand, and worries about neighborhood crime are in agreement with past studies that examined the evacuation response of the general population.<sup>5,6</sup> Some of the experiences noted by the minority participants have not been captured by past studies on disaster responses.

Our findings relate to 3 categories relative to the HBM. The first category is low “perceived susceptibility” to a bad outcome attributed in part to past experience with riding hurricanes, which attenuated their sense of vulnerability, at least before the strengthening of the hurricane to its full force shown on television screens. The second category is “barriers to action.” Some barriers were financial, such as the lack of cash on hand. Other barriers related to inequities in access to evacuation transportation and prevention of evacuation through neighboring parishes, even when passage through the parish was the most direct evacuation route. Another physical barrier was buses not entering the interior of the predominantly African American neighborhoods. This factor was reported to impede the evacuation of older individuals and those with disabilities, which, in turn, at times held up an entire family, who would not abandon those unable to walk to the bus. New Orleans evacuees testifying before the Congressional Hearing on Hurricane Katrina indicated similar differences in evacuation barriers by race.<sup>17</sup>

Hewins-Maroney et al.<sup>18</sup> note that the interplay between social and cultural factors such as “poverty and social inequities” impact health-seeking behavior. These authors also found that when such factors are absent, African Americans’ health-promoting behaviors are similar to Whites. Our findings resonate with the 2005 national survey of preparedness by Redlener et al.<sup>19</sup> They reported that 25% to 30% of the US population indicate an inability to comply with mandatory evacuation orders without some assistance.<sup>18</sup> They also reported that, nationwide, African Americans have substantially less favorable views and confidence levels in the ability of the government to protect the area that they live in (29%



vs 51% for Whites and 47% for Latinos) and have a greater feeling that their community received less than a fair share of money to prepare for future disasters (56% vs 36% for Whites and 34% for Latinos).

The third HBM category is “cues to action.” One cue to (in)action is recognizable in the delayed mandatory evacuation request and ambiguous evacuation requests by different levels of authorities. The majority of the participants discussed how the governor and mayor waited until it was too late to announce mandatory evacuation. This is in line with the US House of Representatives Bipartisan Committee Report to Investigate the Preparation for and Response to Hurricane Katrina.<sup>17</sup> The report noted that the state governor and city mayor “delayed” mandatory evacuation orders until 19 hours before landfall, despite the national warning 56 hours before landfall. In addition, participants’ perception of governments’ failure to address the issue of inadequate levees and the flooding problems that repeatedly affected predominantly African American and poor neighborhoods before Hurricane Katrina may have served as a “cue to inaction” and warrants additional study.

### Limitations

There are some study limitations. Our sample consisted of individuals evacuated by the American Red Cross to Columbia, a considerable distance from New Orleans. The majority of our sample participants consisted of low-income men with a high school education or less, and thus, our findings may not fully generalize to the total African American community. Their experiences may not apply universally to all of the African Americans who did not evacuate before Hurricane Katrina made landfall. It is possible that they may differ significantly in family structure and the related evacuation constraints from those evacuated to nearby places such as Houston, Tex. In addition, the respondents self-reported the events before and after Hurricane Katrina, and the accuracy of the reporting may have been compromised. However, New Orleans evacuees who testified before Congress mentioned similar experiences, such as crime, financial barriers, and perceived racism and inequities. Additional research is needed to understand the relative importance of different factors in the

decision to not evacuate so as to design the appropriate mix of policy responses to preempt the tragedy that followed Hurricane Katrina.

### Policy Implications

Our findings support the study by Brodie et al.<sup>20</sup> of Hurricane Katrina evacuees, which showed that a combination of poverty and perceptions of racism and inequities influenced African Americans to not evacuate, even after reaching the stage of high threat perception. This is quite troubling for several reasons. More than half of African Americans in the United States are poor or near poor.<sup>21</sup> Next, hurricane activity is predicted to increase in the coming years, both in terms of actual number of hurricanes<sup>22</sup> and the number with category 3 or higher severity.<sup>23</sup> Federal, state, and local governments should emphasize in all disaster preparedness plans clear and timely evacuation orders, needed resources and their allocation (for gas and incidentals during evacuation), decentralized voucher or cash distribution systems, and culturally sensitive logistic planning for facilitating the evacuation of minority, low-income, and underserved communities. It is very important as well that the perception of race-based inequities be explored in depth to understand their contribution to the disproportionate casualties and suffering experienced by minorities in emergencies such as that created by Hurricane Katrina. ■

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K. Elder and S. Xirasagar originated and directed all phases of the study. N. Miller analyzed the data and assisted in writing the article. S.A. Bowen conducted the

focus groups, analyzed the data, and assisted in writing the article. S. Glover and C. Piper assisted with the study and writing of the article. All of the authors helped to conceptualize ideas, interpret findings, and review drafts of the article.

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This study was approved by the University of South Carolina Institutional Review Board.

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